

Evaluation and Certification ABAR-W375-00-00008

This ABAR involves the modifications of standards previously identified in the approved SRD. Safety Criteria 7.0-1, 7.0-3, 7.5-1 and 7.5-2 currently reference several sections of the ISMP as the implementing standards. A newly developed ad hoc standard has been identified as the implementing standard that will take the place of these ISMP sections.

The BNFL Conduct of Operations standard was identified by a multi-disciplined team consisting of the following:

Ian Wheeler, lead	Operational Safety
Dale Lindsey	Project Operations
John Hammond	Safety Implementation
Gale Voyles	Project QA
Todd Allen	Safety & Regulatory Programs

The project team has reviewed a number of possible standards. The Implementing Standard accepted was a newly created ad hoc standard based on a tailoring of DOE Order 5480.19.

Other standards considered were:

IAEA 50-C0-0, Code on the Safety of Nuclear Power Plants Operations.

ISO 9002, Quality Systems - Model for Quality Assurance in Production, Installation and Servicing

DOE Standard STD-1032-92, Guide to Good Practices For Operations Organization and Administration

DOE Order 5480.19, Conduct of Operations Requirements for DOE Facilities

A. Evaluation

The evaluation of the BNFL Conduct of Operations standard was performed from a first principles perspective. The evaluation demonstrates that the standard:

1. Achieves adequate safety,
1. Complies with applicable laws and legal requirements, and
2. Conforms with top-level safety standards and principles stipulated by DOE.

The demonstration of achieving adequate safety was performed through a comparison with the following:

- the existing safety criteria for conduct of operations,
- the RU evaluation of the safety criteria contained in DOE/RL-98-01 and DOE/RL-98-20,
- the RU evaluation of the ISMP sections contained in DOE/RL-98-03, and
- the RU evaluation of the initial safety analysis contained in DOE/RL-98-09.

The RU reviewed the original safety criteria and reported the results of the review in RL/REG-98-01. These safety criteria were conditionally approved, as noted in section 4.2 under "Safety Responsibility, Section 3.2.3.1.2" and "Conduct of Operations, Section 3.2.3.3.1." BNFL subsequently added safety criterion 1.0-9 to resolve the Safety Responsibility concern and added implementing standards to resolve the conduct of operations concerns. The revisions were reviewed by the RU and the results documented in RL/REG-98-20, sections 3.3 and 3.10. The conclusions of the review were that safety criteria 7.0-1, 7.0-3, 7.5-1, and 7.5-2 adequately addressed the top-level principles.

Evaluation Against Applicable Laws and Regulation

There are no applicable laws or regulations.

Evaluation Against Applicable Top-Level Principles

4.3.1.1 Organizational Structure

The Contractor should exert full responsibility for the safe operation of the facility through a strong, unambiguous organizational structure.

Evaluation: Facility policies are to be developed in accordance with section 3.1 of the standard. The policies are required to establish clear lines of responsibility for normal and emergency operations. Section 3.1 of the standard further requires that senior management establish operating standards for the facility. These operating standards are required to contain a clear definition of responsibility in plant operations.

4.3.1.2 Normal Operations

Operations should be conducted in accordance with approved technical safety requirements and in strict accordance with administrative and procedural controls.

Evaluation: Section 3.2.1 of the standard requires that the facility be operated through adherence to operating procedures and the technical specifications (technical safety requirements).

4.3.1.3 Emergency Operating Procedures

To provide a basis for suitable operator response to accident conditions, emergency operating procedures should be established, documented and approved.

Evaluation: Chapter 3.16 of the standard deals with the development of operating procedures. As described in section 3.16, procedures are written for operating systems and equipment during postulated abnormal and emergency conditions.

4.3.1.4 Readiness

The facility manager should ensure that all elements for safe facility operation are in place, including an adequate number of qualified and experienced workers. Minimum requirements also should be set for the availability of staff and equipment.

Evaluation: Section 3.2.8 of the standard requires that sufficient staff, equipment and funding be allocated to permit the operations department to effectively perform its functions.

5.1.3 Process Safety Responsibility

The ultimate responsibility for process safety rests with the Contractor. In no way should this responsibility be diluted by the separate activities and responsibilities of designers, suppliers, constructors, the Regulatory Unit, or independent oversight bodies.

Evaluation: Safety criterion 7.0-1 is one of three safety criteria (1.0-9, 7.0-1 and 7.1-3) that address this top-level principle. As stated in RL/REG-98-01, section 3.2.3.1.2,

“The reviewers determined that these safety criteria do not adequately incorporate and conform to this principle because the safety criteria do not address one important aspect of the principle. The criteria do not state that BNFL Inc. assumes “ultimate responsibility” for facility process safety. Additionally, the issue of full safety responsibility (ultimate responsibility) is further brought into questioned by the proposed formation of a “limited liability corporation.” In correspondence subsequent to the SRD submittal (BNFL letter W338-98-0004 dated February 19, 1998), BNFL provided additional information regarding their responsibility for safety. BNFL stated that, “... we take full ownership and responsibility for the safety of the workers and the public. However, the reviewers determined that the SRD must clearly state that BNFL assumes “ultimate responsibility” for facility process safety. Additionally, no subordinate standards were identified for this principle.”

The requirement that BNFL assumes full responsibility for facility safety was subsequently included in safety criterion 1.0-9. The portion of the top-level principle that was addressed in SC 7.0-1 was the operations in accordance with approved operational safety requirements and in accordance with procedures and administrative controls. Section II.B of the standard requires that the facility be operated through adherence to operating procedures and the technical specifications or operational safety requirements. Therefore, the standard conforms to the top-level principle.

Conclusion: The BNFL Conduct of Operations standard adequately addresses and conforms with top-level principles 4.3.1.1, 4.3.1.2, 4.3.1.3, 4.3.1.4, and 5.3.1.

Evaluation Against Applicable Safety Criteria

Safety Criterion: 7.0 - 1

Normal operations shall be conducted in accordance with approved operational safety requirements and in strict accordance with administrative and procedural controls.

Evaluation: Section 3.2.1 of the standard requires that the facility be operated through adherence to operating procedures and the technical specifications (technical safety requirements).

Safety Criterion: 7.0 – 3

The operating organizations shall become and remain familiar with the features and limitations of components included in the design of the facility. They shall obtain appropriate input from the design organization on pre-operational testing, operating procedures, and the planning and conduct of training.

Evaluation: On-shift training is discussed in section 3.5 of the standard. Other aspects of training are as discussed in the training safety criteria (7.2-1 through 7.2-8)

Safety Criterion: 7.5 – 1

A program for conduct of operations at the facility shall be established and implemented using a tailored approach.

Evaluation: The standard in its entirety sets out the requirements of a conduct of operations program. The standard intentionally gives flexibility to allow a tailored approach in line with hazards present in the RPP-WTP facility.

Safety Criterion: 7.5 - 2

The conduct of operations program shall address:

- (1) *Operations organization and administration;*
- (2) *Shift routines and operating practices,*
- (3) *Control area activities;*
- (4) *Communications;*
- (5) *Control of on-shift training;*
- (6) *Investigation of abnormal events;*
- (7) *Notifications;*
- (8) *Control of equipment and system status;*
- (9) *Lockout and tagout;*
- (10) *Independent verification;*
- (11) *Logkeeping;*
- (12) *Operations turnover;*
- (13) *Operations aspects of facility chemistry and unique processes;*
- (14) *Required reading;*
- (15) *Timely Orders to operators;*
- (16) *Operations procedures;*
- (17) *Operator aid postings;*
- (18) *Equipment and piping labeling;*
- (19) *Emergency operating procedures for dealing with responses to accident conditions.*

Evaluation: Each sub-criterion identified in the SRD is addressed in a corresponding chapter in the standard, with the exception of (19), emergency operating procedures. However, the first paragraph of section 3.16, of the standard states “Operating procedures shall be written to provide specific direction for operating systems and equipment during normal and postulated abnormal and emergency conditions.” Therefore, the standard completely addresses the requirements of safety criterion 7.5-2.

Conclusion: The BNFL Conduct of Operations standard appropriately implements the requirements of safety criteria 7.0-1, 7.5-1, and 7.5-2.

Identification of Commitments and Evaluation

DOE/RL-98-01, DOE/RL-98-03, DOE/RL-98-09, and DOE/RL-98-20 were reviewed to identify any commitments identified by the Regulatory Unit during review of the ISAR, ISMP or SRD. Two ISMP commitments were specifically identified by the RU in their assessment of the ISMP (DOE/RL-98-03, section 3.2.2.8.1). The commitments were:

- “Section 1.3.15, “Operations,” of the BNFL ISMP commits to implementing principles for achieving excellence in operation of the TWRS-P facility through a Conduct of Operations program. The ISMP outlines the significant attributes of this program.”
- “Finally, BNFL commits in Section 4.2.3.2 of its ISMP to revise the ISMP to “...give greater attention to the conduct of operations...” as the project nears operation. BNFL also notes that the Final Safety Analysis Report (FSAR) “...places emphasis on conduct of operations.”

The commitments identified above will not be reduced or deleted by the implementation of the BNFL Conduct of Operations standard as the standard provides a greater level of guidance in developing the Conduct of Operations program than previously provided in the ISMP.

Conclusion

The adoption of the BNFL Conduct of Operations standard will:

1. achieve adequate safety
2. conform with top-level safety standards and principles stipulated by DOE, and
3. not result in a reduction in commitment relied on by the RU in reaching a regulatory decision.

References

BNFL-5193-SRD-01, Revision 2e, TWRS-P Safety Requirements Document

BNFL-5193-ISM-01, Revision 4b, TWRS-P Integrated Safety Management Plan

BNFL-5193-ISAR-01, Revision 0, TWRS-P Initial Safety Analysis Report

DOE/RL-96-0005, Revision 1, Concept of the DOE Regulatory Process for Radiological, Nuclear, and Process Safety for TWRS Privatization Contractors

DOE/RL-96-0006, Revision 1, Top-Level Radiological, Nuclear, and Process Safety Standards and Principles for TWRS Privatization Contractors

DOE/RL-98-01, DOE Regulatory Unit Evaluation Report of the BNFL Inc. Safety Requirements Document

DOE/RL-98-03, DOE Regulatory Unit Evaluation Report of the BNFL Inc. Integrated Safety Management Plan

DOE/RL-98-09, DOE Regulatory Unit Evaluation Report of the BNFL Inc. Initial Safety Assessment

DOE/RL-98-20, DOE Regulatory Unit Evaluation of BNFL Inc. Safety Requirements Document, Revision 1

B. Certification of SRD Changes

The SRD continues to identify a set of standards that, when implemented, will provide adequate safety, comply with all applicable laws and regulations, and conform to top-level safety standards.

Certification that the revised SRD identifies a set of standards that continues to provide adequate safety, complies with all applicable laws and regulation, and conforms to top-level safety standards is based on adherence to the DOE/RL-96-0004 Standards Identification Process and successful completion of review and confirmation by the PSC.

TWRS-P General Manager/Designee - Approval

Date